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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/516,913 | 06/03/2005 | Serge Baumert | 0512-1244 | 8630 |

466 7590 03/02/2010

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| EXAMINER | |
|---|---|
| LE, MARK T | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 3617 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 03/02/2010 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DocketingDept@young-thompson.com

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/516,913 | BAUMERT ET AL. | |
| | Examiner | Art Unit | |
| | MARK T. LE | 3617 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *08 December 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,2,4-7,9-19 and 21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-7,9-19 and 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

1. This communication is responsive to the amendments filed on December 8, 2009. Applicant's amendments and remarks have been carefully considered.

2. Claims 1-2, 4-7, 9, 11-17, 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kais (US 6,177,205) in view Bhadeshia (US 5,879,474).

Kais discloses a stretch of rail comprising switch element 12 made of high alloy steel including manganese content of 10-20%, connected directly to the lengths of carbon steel rails 14,16 by welding without deposition of metal (see for example claim 1 of Kais patent), i.e. by electron-beam welding.

Regarding the instant claimed rail being made of bainitic steel without carbide, and the instant claimed composition of the rail, consider column 3, second paragraph of Bhadeshia, which describes a bainitic steel rail without carbide or carbide-free, and the bainitic steel rail has the material composition as recited in instant claims. See also the disclosure of Bhadeshia, e.g. lines 15-21 on column 1, lines 17-21 on column 2, and the last paragraph of column 2 continued into the first three lines of column 3; wherein, bainitic steel rail is preferred over pearlitic steel rail for its enhanced wear resistance, rolling contact fatigue, toughness, weldability, and the advantages of elimination of heat treatment operations during both production and after welding heat treatment.

In view of Bhadeshia, it would have been obvious to one skilled in the art to substitute bainitic steel rail with material composition similar to that taught by Bhadeshia, for the pearlitic steel rail of Kais so as to achieve the above described advantages.

As to the method of welding, note that on the one hand the claimed flash welding and forging is considered to relate a process, which is not considered to be patentably significant in an apparatus claim. On the other hand, note that the rail of Kais, as modified, is made of bainitic steel instead of pearlitic steel; therefore, as a matter of common sense, it would have been obvious to one skilled in the art to select a well known method of welding that is more suitable for bainitic steel, such as flash butt welding or the similar flash welding and forging (which are well known method of welding in the art - Official Notice is taken), so as to achieve a strong weld connection with bainitic steel.

Regarding the method step including no after heat treatment, consider the last paragraph on column 2 of Bhahdeshia and continued into the first three lines on column 3.

Regarding the instant claimed hardness of the medium-alloy low-carbon steel, as recited in instant claim 11, consider the hardness of bainitic steel shown in the table on top of the last page of Bhadeshia, which includes hardness of 400 HV30 within the range of 350-390HB as claimed. Note that the length of rail of Kais, as modified above, is made from the bainitic steel having hardness similar to that of Bhadeshia.

3. Claims 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art as applied to claims 1 and 15 above, and further in view of the prior art described in the last six lines of page 3 of the instant specification.

Regarding the instant claimed switch element having hardness between 170 and 230HB, as recited in instant claim 10, it is noted that Kais does not disclose the specific

hardness of the switch element. In the last six lines of page 3 of the instant specification, there is a switch element made of a material, which is similar to that of Kais, that is well known under the name of HADFIELD and has hardness between 170 and 230 HB. Therefore, it would have been obvious to one skilled in the art to use a material having similar hardness to that of the prior art switch element described in the instant specification, for forming the switch element of Kais so as to achieve the expected structural integrity thereof.

4. Response to Applicant's Arguments:

The examiner has carefully considered Applicant's Arguments. Applicant should note that Kais suggests the use of electronic beam welding, instead of flash butt welding, for the direct joining because electronic beam welding is more suitable for use with pearlitic steel rail. However, in the instant case, Kais is not applied alone, but it rather has been modified with Bhadeshia to use bainitic steel rail for its advantages over pearlitic; therefore, as a matter of common sense, it would have been obvious to one skilled in the art to use a well known welding method, such as flash butt welding or the similar flat welding and forging, that is more suitable for bainitic steels. Note for example flash butt welding is well known to be suitable for bainitic steels, as evidenced by the descriptions in the abstracts of Japanese references JP 11-92866 and JP 2001-98342. It also noted that flash butt welding and flash welding and forging are similar as acknowledged by the applicant of the present application (see the next to last paragraph on page 11 of Applicant's arguments/remarks, filed on December 8, 2009.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARK T. LE whose telephone number is (571)272-6682. The examiner can normally be reached on Mon-Fri, between 8:15-4:45 (Teleworking).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samuel Morano can be reached on 571-272-6684. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Mark Tuan Le
Primary Examiner
Art Unit 3617

/Mark Tuan Le/
Primary Examiner, Art Unit 3617